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THE GENUS *ATYMNA* STÅL AND A NEW RELATED GENUS (HOMOPTERA: MEMBRACIDÆ)¹

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In 1867 *Atymna* was described as a subgenus of *Cyrtosia* Fitch (nom. nov. *Cyrtolobus* Goding (1892)) by Carolus Stål. Stål cited *Smilia castaneæ* Fitch in his description so that species has become, *ipso facto*, the type species. The group *Atymna* remained a subgenus until it was given generic rank in Funkhouser's catalogue.² In the present paper the genus has been redescribed, two new species from Mexico have been added, one species transferred to *Cyrtolobus*, and a new closely-related genus described.

Atymna Stål

1867. Stål, C. Bidrag till Hemipterernas Systematik. Ofversigt af Kongl. Vetenskaps-Akademiens Förhandlingar, xxiv: 554.

“b. Thorace anterieus altissimo, dorso etiam inter et ante angulos laterales paullo compresso-acuto vel altius carinato.—Subg. *Atymna* Stål. (Ad hoc

¹ The author wishes to acknowledge the kindness of Dr. W. D. Funkhouser in loaning specimens of all species of *Atymna* found in the United States. The types of the new species described in this paper are to be deposited in the collection of the U. S. National Museum as soon as possible.

² Funkhouser, W. D. 1927. General Catalogue of the Hemiptera. Fasc. 1, Membracidae, 581 pp. · Smith College, Northampton, Mass.

subgenus pertinent *Smilia castaneæ* Fitch, verisimiliter etiam plures species ab auctoribus americanis ad *Smiliam* et *Gargarum* relatæ).''

Redescription of Genus

Crest of pronotum rounded in front, usually high, highest above humeral angles or humeral sinuses behind angles; metopidium straight, nearly straight, or convex, but in all specimens the crest rounded above humeral angles and sinuses. Behind the humeral sinuses the crest straight to posterior end of pronotum, rounded to posterior third and then straight to terminal end, or straight with a sinus at posterior third and then straight or slightly convex to terminal end of pronotum. Sides of pronotum tectiform, not compressed at median spot. Scutellum concealed, tibiæ not dilated, posterior tarsi not reduced, tegmina membranous, partly concealed by pronotum, third apical cell stylate, venation as in *Cyrtolobus*.

Type: *Atymna castaneæ* Fitch.

This genus is very close to *Cyrtolobus*, falling between that genus and *Smilia* Germar. *Atymna* can be distinguished from *Cyrtolobus* by the crest being highest above the humeral angles or humeral sinuses and by the rectilinear or nearly rectilinear slope of the dorsum to the terminal end of the pronotum. The crest of *Cyrtolobus* is more regularly arcuated, with the highest point at the middle or close to the middle. *Atymnina*, n. gen., is recognized by the very low dorsal crest being almost straight to the middle, where it gradually decurves to the terminal end of the pronotum.

The genus *Atymna* has been broadly defined to include such divergent forms as *A. inornata* Say and *A. querci* Fitch, each with a rather low dorsal crest in front, convex metopidium, and straight dorsal line behind the humeral angles, and others such as *A. gigantea*, n. sp., with a very high crest in front, straight metopidium, and broken dorsal line behind the middle. *A. inornata*, *A. querci*, and *A. pilosa* Funkhouser seem to form a natural group and might well be placed in a separate genus, but this does not appear advisable or necessary at the present time. The writer concurs with Dr. Funkhouser that *Cyrtolobus* (*Atymna*) *helena* Woodruff is not a true *Atymna* and should not be included

in that genus. The highest point of the crest of *C. helena* is behind the humeral sinuses, not above them, in the 7 specimens examined by the author. Furthermore, the crest or dorsal line of the pronotum is convex, not straight, to the posterior termination of the pronotum.

Fortunately, all except one of the previously known species in this genus have been well described or redescribed by Van Duzee and Funkhouser. These references are in Funkhouser's catalogue³ and need not be repeated here. The remaining species, *A. atromarginata*, was recently described by Goding.⁴ A side-view drawing of *A. simplex* V. D. (Pl. VIII, Fig. 1), and front-view drawings of *A. castaneæ* (Pl. VIII, Fig. 2) and *A. querci* (Pl. VIII, Fig. 3) are included to assist in the recognition of those species.

KEY TO THE GENUS *Atymna* (FEMALES)

- I. (II) Pronotum high. (Pl. VIII, Figs. 1, 2, 6-8. Funkhouser,⁵ Pl. xxviii, Fig. 11.)
- A. Humeral angles prominent, auriculate. Pronotum sharply rounded at summit, then sloping straight to posterior end. Length 8.0 mm.; width 3.5 mm. (Ecuador).
atromarginata Goding⁶
- B. Humeral angles not prominent, not auriculate. Crest of pronotum more evenly rounded at summit.
1. (2) Pronotum arcuate to terminal third, thence straight to posterior end. Very large, length 10.5 mm.; width 4.0 mm. (Mexico) *gigantea* n. sp.
(Pl. VIII, Figs. 4-6.)
2. (3) Crest of pronotum behind humeral sinuses straight to posterior end. Length 7.5 to 8.0 mm.; width 2.5 to 2.75 mm. (Eastern U. S. A.) *castaneæ* Fitch
(Funkh.,⁵ Pl. xxviii, Fig. 11.)
3. (2) Crest of pronotum straight from behind humeral sinuses with usually a slight sinuation behind middle.
- a. Metopidium sloping. Inferior margins of face rounded. Length 5.75 to 6.0 mm.; width 2.0 to 2.25 mm. (Mexico) *distincta*, n. sp.
(Pl. VIII, Figs. 7-10.)

³ Loc. cit.

⁴ Goding, F. W. 1928. New Membracidae VII. Bull. Brook. Ent. Soc. 23: 137-142. 1929. The Membracidae of South America and the Antilles. IV. Subfamilies Hoplophorioninæ, Darninæ, Smiliinæ, Tragopinæ. (Homoptera.) Amer. Ent. Soc. Trans. 55: 197-330, illus. (Key).

- b. *Metopidium convex*. Inferior margins of face straight. Length 8.0 to 8.25 mm.; width 3.0 (Southwestern U. S. A.) *simplex* V. D.
(Pl. VIII, Fig. 1.)

II. (I) Pronotum low, metopidium convex. (Pl. VIII, Fig. 3. Funkh.,⁵ Pl. xxviii, Figs. 13-14.)

A. Pronotum densely pilose; humeral angles prominent, auriculate. Length 4.8 mm.; width 2.0 mm. (Peru)..... *pilosa* Funkhouser⁶

B. Pronotum not pilose; humeral angles not prominent, not auriculate.

1. (2) Head smooth with very fine shallow punctuations. Both sexes green. Length 6.0 mm.; width 2.0 mm. (Eastern U. S. A.) *inornata* Say
(Funkh.,⁵ Pl. xxviii, Fig. 14.)

2. (1) Head usually sculptured and with few, if any, punctuations. Females green; males brown. Length 6.0 to 6.5 mm.; width 2.5 mm. (Eastern and midwestern U. S. A.) *querci* Fitch
(Pl. VIII, Fig. 3 Funkh.,⁵ Pl. xxviii, Fig. 13.)

Aтымna gigantea new species (Pl. VIII, Figs. 4-6)

FEMALE: Green, largest in genus (10.5 mm. long). Crest of pronotum high in front, rounded to posterior third, thence straight to posterior end of pronotum. Shape of pronotum superficially resembling that of *Smilia camelus* Fab.

Head with base straight at middle, at each end base rounded down to eyes, more than twice as wide as long; coarsely and irregularly punctate, not sculptured, with very few hairs; ocelli large, prominent, nearer to each other than to the eyes, and below an imaginary line drawn through center of the eyes; epicranial suture deep; inferior margins of face slightly sinuate; clypeus deflexed, narrowed below inferior margins of face.

Pronotum high, highest just behind humeral angles; metopidium straight; crest well rounded to posterior third, thence straight to acute posterior termination of pronotum; lateral margins very straight, terminal end extending past middle of terminal areoles of tegmina; humeral angles obtuse, rounded, not prominent; pronotum evenly and coarsely punctuate.

Color of head testaceous, maculate with gray between the eyes. Pronotum green when collected, now green maculate with testaceous; mid-carina reddish brown except in front, where it is light testaceous marked with brown, brown in some punctuations on sides below carina. Tegmina hyaline, clouded with brown at apices; veins light testaceous. Body and legs testaceous, the tarsi and claws dark reddish brown. Dark brown area at base of ovipositor.

⁵ Funkhouser, W. D. 1917. Biology of the Membracidae of the Cayuga Basin. Cornell Univ. Agr. Exp. Sta. Mem. 11, pp. 173-445, illus.

⁶ Not seen by author.

MALE: Smaller (9.0 mm.); clypeus more constricted below inferior margins of face than in female. Pronotum lower, sides more regularly tectiform; crest of pronotum rounded in front and straighter from behind humeral angles to posterior termination than in female, a sinus at posterior third; lateral margin curved upward to apex of pronotum; apex acute, not attaining terminal areoles of tegmina.

Head testaceous, maculate with brown. Pronotum green when collected, now testaceous maculate with green. Tegmina hyaline, the apical portion entirely brown; veins dark brown. Thorax light testaceous marked with black, the third tarsus and claws dark brown. Abdomen black, venter maculate with light testaceous. In other respects similar to the female.

Type, female, el Desierto de los Leones, Distrito Federal, Mexico (9,000 feet), September 2, 1934.

Allotype, male, from same place, June 17, 1934.

Described from single male and female taken on oak (*Quercus* sp.). Although these specimens were taken on the same tree on different dates there is no question that they are the same species. It is evidently very scarce.

Aтымna distincta new species (Pl. VIII, Figs. 7-10)

FEMALE: Small, bright green species with pronotum high in front. Close to *A. gigantea*, n. sp., but distinguished from that species by size, coarser punctations, and rounded inferior margins of face. Length 5.75 to 6.0 mm.; width 2.0 to 2.25 mm.

Head with base arcuate, twice as wide as long; numerous and even punctations, very few hairs; ocelli small, nearer to the eyes than to each other, below an imaginary line drawn through the center of the eyes; clypeal margins of the face rounded and indistinct; epicranial suture indistinct; clypeus projecting only a short distance below inferior margins of face; inferior margins of face rounded, not typical of genus.

Pronotum with metopidium straight or nearly straight; crest high and rounded above humeral angles and humeral sinuses, continuing as a straight line to posterior third, where there is usually a slight sinuation, thence slightly convex to posterior termination of pronotum; lateral margins almost straight or slightly arched to posterior apex; apex acute, almost as long as tegmina; humeral angles obtuse, rounded at apices, not prominent; deeply and coarsely punctate.

Color when collected bright green, now becoming light testaceous maculate with green. Head testaceous; eyes dark brownish red. Small amount of brown on dorsal carina. Thorax and abdomen light green to testaceous. Legs light testaceous, claws darker. Tegmina hyaline, apices sometimes marked with testaceous.

MALE: Smaller than the female (5.0 mm.); brown and cream colored, the

markings somewhat resembling those of the male of *Cyrtolobus parvulus* Woodruff.

Pronotum lower than in female, crest evenly rounded from base of head to slight sinus in middle, after which the crest is rounded slightly in front of another, more prominent, sinus at posterior third of pronotum, thence rounded down to acute terminal end of pronotum; upper half of pronotum laterally compressed behind humeral angles, a bulbous expansion on side below crest in front of first sinus of crest, sometimes obscure; another smaller expansion below crest between the two sinuses of crest, sometimes absent; posterior end of pronotum not reaching middle of terminal areoles of tegmina.

Head cream colored, marked with brown. Eyes brown. An oblique cream-colored pronotal band extending from dorsum above humeral angle to middle of lateral margin, sometimes obscure or missing; pronotum in front of band brown, mottled with cream; behind the cream-colored vitta a light to dark brown V-shaped area extending from crest to lateral margin and surrounding a mid-dorsal translucent area; the front arm inclined forward and contiguous with the cream-colored vitta, the posterior arm inclined only slightly forward; the front arm of variable width, wider at extremities, the posterior arm wider and less variable. Posterior to this vitta a narrow, subapical cream-colored band, usually obscure at middle, followed by light to dark brown veins and light brown markings at apices. Under parts of body light testaceous. In other respects similar to the female.

Type, female, near Horno Viejo, Distrito Federal, Mexico (about 8,000 feet), July 11, 1934. This locality is at kilometer 17 on the road to Toluca, Mexico.

Allotype, male, same locality and date.

Described from 17 males and 46 females taken at type locality and at Santa Rosa, Distrito Federal, from May to September on oak trees (*Quercus* sp.). Two male and 4 female paratypes are in the collection of W. D. Funkhouser.

One of the tegmina of a female lacks the cross-vein at the base of the corium. This may suggest an affinity with the genus *Smilia*.

Atymnina new genus

Pronotum long and narrow; metopidium very low, convex; dorsal crest almost straight to middle, where it is gradually decurved to long narrow terminal end; lateral margin decurved to apex at posterior end; apex acute; sides of pronotum rounded in front above humeral angles and humeral sinuses, tectiform behind humeral sinuses. Scutellum concealed; tibiae not dilated, posterior tarsi not reduced; tegmina membranous, partly concealed by pronotum, third apical cell stylate, venation like that of *Cyrtolobus* and *Atymna*.

Type, *Atymnina elongata*, n. sp.

This genus falls close to *Atymna* but it can readily be distinguished by the low flat dorsum and by the long narrow appearance when viewed from the side.

Atymnina elongata new species (Pl. VIII, Figs. 11-12)

A green species with rather flat dorsum above humeral angles and long narrow pronotum. Length 7.5 mm.

Head with base straight, extreme margins sloping down to eyes; little more than twice as wide as long; a few coarse punctations, vaguely sculptured, sparsely pubescent; ocelli prominent, equidistant from each other and from the eyes, slightly below an imaginary line drawn through center of eyes; eyes large, prominent; inferior margins of face sinuate, less than half of clypeus extending below inferior margins of face.

Pronotum with metopidium convex; the cephalic half of dorsum flattened on top with crest straight, the flattened area being wider above humeral angles, from there to middle of dorsum becoming progressively narrower; crest behind middle convex to decurved posterior end of pronotum; apex acute, extending to middle of terminal areoles of tegmina; sides rounded to flattened dorsum of cephalic half, caudal half with sides tectiform; lateral margin decurved at extreme posterior end to apex; coarsely and evenly punctate, punctations smallest on metopodium.

Color green when collected; now light testaceous and green. Face, body, and legs testaceous maculate with green. Tegmina perfectly hyaline, veins marked with much green.

Type, female, Santa Rosa (about 8,000 feet), near el Desierto de los Leones, Distrito Federal, Mexico, September 3, 1934.

Described from a single female taken on oak (*Quercus* sp.). Since this genus is close to *Atymna* but easily distinguished from it, the writer feels justified in describing it from a single specimen at this time.

PLATE VIII

- Figure 1. *Atymna simplex* V. D. Side view of female.
Figure 2. *Atymna castaneæ* Fitch. Front view of female.
Figure 3. *Atymna querci* Fitch. Front view of female.

Atymna gigantea, n. sp.

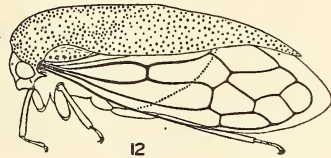
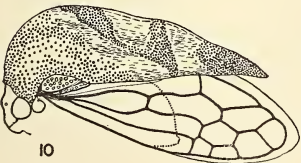
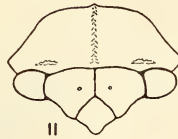
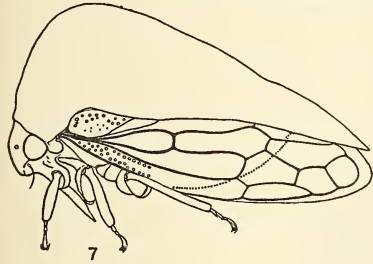
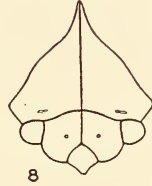
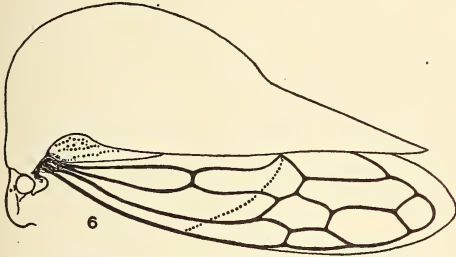
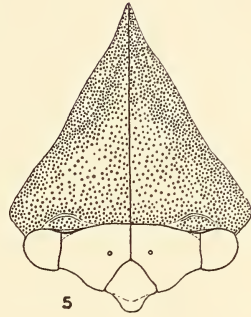
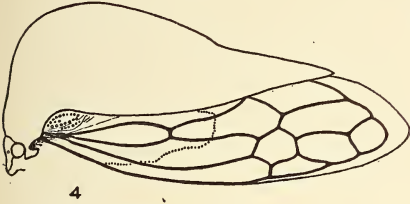
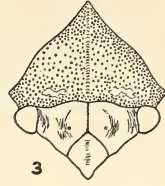
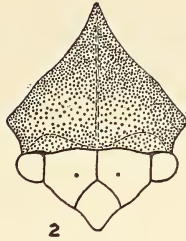
- Figure 4. Side view of male.
Figure 5. Front view of female.
Figure 6. Side view of female.

Atymna distincta, n. sp.

- Figure 7. Side view of female.
Figure 8. Front view of female.
Figure 9. Dorsal view of male.
Figure 10. Side view of male.

Atymnina elongata, n. sp.

- Figure 11. Front view of female.
Figure 12. Side view of female.



MEMBRACIDÆ